8360/8400 NSX-V Integration

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Agenda: 8360/8400 VMware NSX-V Integration

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Overview
VMware NSX-V/8325/8360/8400 Integration Overview

• 8325/NSX-V integration was certified in 10.4 with NSX-V 6.4.4

• New in 10.6
  • 8360/8400 NSX-V integration
  • Certification will start after 10.6 GA

• This session will focus on describing the main differences between 8325 and 8360/8400 with regards to NSX-V integration and include demos
Use Cases
VMware NSX-V/8325/8360/8400 Integration

- Used in DC environments with NSX-V, VMs and bare metal servers
- Provides L2 network connectivity between VMs (on ESXi hosts) and Bare Metal Servers connected to the Hardware VTEP switch (8325/8360/8400)

- Mainly used for
  - P2V (Physical to Virtual) migration
  - Bare Metal Workloads that cannot be virtualized, but require L2 connectivity with VMs
Details
VMware NSX-V/8325/8360/8400 Integration Details

- Scalability:
  - 4093 VNIs on 8400
  - 2032 VNIs on 8325/8360
  - 2048 hosts per VNI
  - 32k hosts per device (HW-VTEP)
  - 10 replicators

- Feature is dependent on VxLAN, MAC and BFD features
- Feature interacts with VxLAN, MAC and BFD
  - VxLAN interaction is required for Tunnel creation
  - BFD interaction is required to create BFD sessions to replicator nodes
  - MAC interaction is required to export local MACs to NSX controller and import remote MACs via NSX controller

- NSX-V integration feature is configurable via REST API
- Relevant information can be fetched via REST API from different OVSDB tables listed as,
  - HSC, Virtual_Network_ID, Tunnel_Endpoint, MAC, BFD_Session
VMware NSX-V/8325/8360/8400 Integration Caveats

- NSX-V integration feature is mutually exclusive with EVPN
- Only standalone switches can be NSX-V integrated
- 8400 chassis dual MM HA failover is supported with NSX-V integration in non hitless mode
- VSX deployment support for NSX-V integration is planned for future
- VLAN-VNI mapping is required to be configured manually on the switch
- OVSDB control plane connectivity between NSX controller and switch has to utilize OOB “int mgmt”
Configuration
VMware NSX-V/8325/8360/8400 Integration Configs

- Switch configuration with HSC (NSX-V integration feature)

```
HWGW(config)# HWGW(config)# interface mgmt
HWGW(config-if-mgmt)# no shutdown
HWGW(config-if-mgmt)# ip static 1.1.1.50/24
HWGW(config-if-mgmt)# default-gateway 1.1.1.1
HWGW(config)# hsc
HWGW(config-hsc)# manager ip 1.1.10.51
HWGW(config-hsc)# manager port 6640
HWGW(config-hsc)# bfd enable
HWGW(config-hsc)# enable
```

'manager ip' is NSX primary controller IP address
'manager port' is port on which NSX is listening for OVSDB connection
'bfd enable' to enable BFD for service replicator nodes

- VXLAN configuration

```
HWGW(config)# interface loopback 1
HWGW(config-loopback-if)# ip address 2.2.2.32
HWGW(config)# interface vxlan 1
HWGW(config-vxlan-if)# ip address 2.2.2.2
HWGW(config-vxlan-if)# no shutdown
HWGW(config-vxlan-if)# vni 1000
HWGW(config-vni-1000)# vlan 10
```
VMware NSX-V/8325/8360/8400 Integration Configs

- NSX-V configuration
  - On switch do ‘show crypto pki certificate local-cert pem’ and copy the certification
  - Log on to vSphere client
  - Select Networking and Security > Service Definition
  - Click the Hardware Devices tab
  - Click the Add (+) icon to create the hardware gateway profile details. Click ok.
  - ‘Enable BFD’ check box is optional

- Validation
  - ‘show hsc’ will show ‘Connection Status’ as ‘ACTIVE’ and ‘Connection State’ as ‘UP’
  - ‘show interface vxlan vtep’ will show the Tunnels with ‘Status’ as ‘operational’ for ‘Origin’ as ‘hsc’
  - ‘show bfd’ will show BFD session are ‘State’ as ‘up’ with all replicator service nodes (RSNs) for ‘Application’ as ‘hsc’
  - Nothing has been changed for configuration steps from previous release
VMware NSX-V/8325/8360/8400 Integration Best Practices

- Only use for L2 workloads when physical workload to virtual workload communication is needed
- It is recommended to follow standard steps given in NSX-V guide
- It recommended to use default port for OVSDB at NSX-V side
- Configure VXLAN before configuring HSC
- VNI and VLAN must match on vSphere Client and Switch. It has to be configured on switch first.
- Enable BFD under HSC context before connecting to vSphere Client if BFD operations are desired.
- Disable the feature first before changing the configuration (for HSC or VXLAN) via CLI or REST API
- Enable the feature once configuration changes are completed
- EVPN and HSC (NSX-V integration) are two different control plane learning feature hence should not be mingled
- Following the above steps can help smooth deployment
- Since it is integration with external software, adding unnecessary configs can lead to issues in connection with NSX-V
Demo
Demo#1: VMware NSX-V/8360 Integration

- Used in DC environments with NSX-V, VMs and bare metal servers
- Provides L2 network connectivity between VMs (on ESXi hosts) and Bare Metal Servers connected to the Hardware VTEP switch (8360)
Demo#2: VMware NSX-V/8360 Integration Troubleshooting

- Traffic not forwarding scenario
- Walkthrough steps
  - To isolate problem

![Diagram of NSX-V/8360 integration](image-url)
Thank you